NEW HAMPSHIRE POLLUTION PREVENTION PROGRAM

Wastelines

Fall 2005

Amalgam Law Reduces Mercury

Pollution prevention's most basic tenet is to remove a hazardous material *before* it enters the waste stream and creates a hazardous waste. This past June, DES adopted Env-Ws 905 to do just that by reducing the amount of toxic mercury discharged to wastewater. Env-Ws 905 requires all dental facilities to install equipment by October 1, 2005 that will trap particles of mercury-containing amalgam created when dentists apply or drill amalgam fillings. Amalgam is composed of 50 percent mercury and the particles generated from dental practices represent the single largest source of mercury in wastewater. Since neither a treatment plant nor private septic system is designed to remove mercury from wastewater, that mercury can pass into the surface water or ground water.

Amalgam separators trap over 95 percent of the solid amalgam particles.

Under this new rule, dental practitioners will have to install an amalgam separator meeting ISO 11143 standards, and manage the trapped amalgam as a hazardous waste, although amalgam can be cheaply recycled. Dentists will also have to provide DES a signed certification providing location and operating information for their particular separator. There is an exemption for specialists who don't generate amalgam waste, as well as a waiver procedure to allow for special circumstances such as using alternate, equivalent equipment.

There are numerous studies showing high levels of dissolved mercury are found in dental wastewater. Nationally, over six tons of mercury are discharged from dental facilities annually and New Hampshire's contribution is estimated to be approximately 64 pounds. Amalgam separators trap over 95 percent of the solid amalgam particles and, in states where amalgam separators were installed, dissolved mercury levels in waste water dropped as much as 68 percent.

P2 Interns - Class of 2005

Since the summer of 1994, many New Hampshire organizations have worked with University of New Hampshire students, mostly chemical engineering majors in the College of Engineering and Physical Sciences, on pollution prevention projects through the P2 Internship Program. The objectives of this program are to assist facilities to discover the benefits of P2; provide trained student interns to assist industries in implementing their P2 plans; develop new information on P2 to build educational modules and assist other businesses; and provide students with practical experience in industrial P2.

This year, five interns were selected to intern at five facilities throughout New Hampshire and Massachusetts. Below are descriptions of what the 2005 summer interns have accomplished at their facility.

Jessica Erickson
Chemical Engineering Major
DES/NHPPP; Concord, N.H.
Project: P2 Outreach and Intern Liaison

Jessica promoted pollution prevention by analyzing returned

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Interns

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surveys from auto salvage facilities as part of the Green Yards Program. She visited several auto salvage yards to deliver free fluid evacuators and fluid drip pans and created easy-to-read documents to assist facilitators for self-certification stormwater permits. She has also visited many marinas in New Hampshire to examine boat washing stations. Along with this, she also worked as a UNH P2 liaison and assisted other interns, as needed.

Jess Erickson

Stephanie Grainger, Chemical Engineering Major
Rohm & Haas Electronic Materials; Marlborough, Mass.
Project: Pilot Plant Acetone Use Reduction

Stephanie developed ways to reduce the volumes of acetone used in the general reactor vessel cleaning/qualification process and in a product specific filter press cleaning process by reducing the amount of products that need cleaning and the frequency of those cleanings. She also developed a distillation process to reuse and/or recycle the acetone used for these cleanings.

Stephanie Grainger

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The New Hampshire Pollution Prevention Program is a free, confidential, non-regulatory, technical and compliance assistance program for New Hampshire businesses, municipalities and others. The NHPPP maintains an information clearinghouse, conducts on-site pollution prevention opportunity assessments, provides pollution prevention planning assistance, and organizes conferences and workshops.

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Michael Snowball, Environmental Engineering Major
Freudenberg – NOK; Bristol, N.H.
Project: Waste Stream Reduction

Michael's internship objectives reflected an emphasis on waste stream identification as well as targeting specific waste streams for reduction/ pollution prevention solutions. The six wash/rinse machines were selected for an in depth analysis of the waste streams generated. Projects undertaken to achieve the objectives included reduction plans for filter use, sludge discharge, electricity, the use of recycled rinse water, and re-use of recycled rinse water.

Michael Snowball

Jingyan Li (Leo), Chemical Engineering Major
Central Metal Finishing; North Andover, Mass.
Project: Facility and Waste Stream Map

Leo has completed the 2005 Toxics Use Reduction Act (TURA) form for Central Metal Finishing. Leo also worked on a facility and waste stream map for its other site located in Windham, and a quality management system documentation organization audit.

Jingyan Li (Leo)

Brian Hess, Chemical Engineering Major
US Postal Service; Portsmouth, N.H.
Project: Post Office Recycling and P2 Programs

Brian compiled a database of the recycling programs at United States Post Offices across New Hampshire and Vermont. He also visited post offices to aid in the establishment and expansion of recycling programs in the areas of paper, aluminum, glass, plastic, fluorescent bulbs, batteries and used oil.

Brian Hess

For more information on the P2 Intern Program, contact Dr. Ihab Farag, UNH Chemical Engineering Department, at (603) 862-2313, or Sara Johnson, DES P2 Supervisor, at (603) 271-6460 or visit www.unh.edu/p2/nhppp/p2intprgm.html.

Mercury Switch Collection Project

Automotive mercury switches are small metal casings that contain approximately one gram of mercury each. The switches are generally located in a vehicle's trunk and hood where they operate convenience lights. While not a hazard when in use, if switches are not removed prior to vehicle crushing, the mercury is emitted as an air pollutant during the final smelting process. As part of a program begun in 2003, about 30 of New Hampshire's 200 salvage facilities have been voluntarily collecting these switches and giving them to the NH Pollution Prevention Program, which in turn pays for having the mercury recycled.

Since the project started, the NHPPP has collected and recycled 3,500 switches. On April 22, NHPPP co-sponsored an Earth Day award ceremony to show the state's appreciation for the New Hampshire Auto and Truck Recyclers Association (NHATRA) for their commitment and dedication to the mercury switch recycling program.

Governor Lynch, DES Commissioner Nolin, the NHPPP, the NH Green Yards Program, members of the NHATRA and ONYX Special Services (mercury recycler) attended the ceremony at Central Auto in Concord.

Gov. John Lynch (left) helps to hold bucket as DES's Paul Lockwood transfers mercury switches collected from junked automobiles at an Earth Day event held in Concord recognizing the NH Auto & Truck Recyclers Association.

For more information go to www.des.nh.gov/nhppp/Mercury/default.asp?link=merc.

Mercury Thermostat Recycling Program

Out-of-service thermostats contain roughly three grams of mercury, which classifies them as hazardous waste. Unfortunately, if they are just thrown away in the trash and improperly incinerated or land filled, they can emit harmful toxins into our environment. To keep that from happening, the Thermostat Recycling Corporation (TRC) provides a collection and recycling program that offers HVAC contractors, builders and homeowners a safe, easy way to properly dispose of spent thermostats. The program is funded by Honey-well, GE and White-Rogers, and the effectiveness of the program is monitored by DES.

The NH Pollution Prevention Program purchased TRC thermostat collection bins and provides them, free of charge, to participating HVAC suppliers and contractors. Once full, the bins are sealed and shipped to TRC where the mercury-containing ampoules are removed and sent to a mercury refiner, who distills the mercury and sells it for reuse in new thermostats and switches. Each bin can hold approximately 75 thermostats, and with three grams of mercury per thermostat, every binful collected keeps a half a pound (225 grams) of mercury out of the environment.

Close to one pound of mercury was collected in 2001 when the program started. Four pounds of mercury have been collected since then. That's close to 600 thermostats, which equals 1,800 grams of mercury saved from entering our environment! This service is entirely free of charge. So, if you are a wholesaler or supplier of thermostats, why not call for a free bin? If you are a contractor, builder or homeowner, save your thermostats and bring them to a participating location for recycling. A list of participating locations can be found at www.des.state.nh.us/nhppp/trc_participants.htm.

Aboveground Petroleum Storage Tanks FAQs

Registering, Counting and Prevention

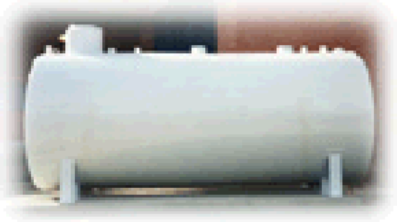
When does a tank have to be registered with the Department of Environmental Services? What size tank do I need to "count" to determine if the facility needs a spill plan? When is the facility required to have a spill prevention counter control (SPCC) plan? These are the types of questions that are frequently asked of the NHPPP.

The following are quick answers to some of these questions. Depending on your facility, you may be required to do more to comply with current rules.

Only tanks that contain petroleum products are regulated. Petroleum includes used oil, waste gasoline, kerosene, and other fuels. Also note that the rules only apply to businesses not residential buildings.

The following facilities must register their tanks with DES.

- Facilities that have a single aboveground storage tank with a capacity of more than 660 gallons.
- Facilities with two or more aboveground storage tanks that have a combined capacity of more than 1,320 gallons, intended for storage, transfer, or distribution of oil.



- Facilities storing less than 1,320 gallons of heating or used oil for on-premise-use heating are exempt.
- Facilities with oil-filled electrical equipment that contains more than 660 gallons of oil.
- Facilities that want to be eligible for reimbursement of incurred expenditures associated with the cleanup of a petroleum release to the environment.

These types of ASTs that contain petroleum, including used oil, must be counted.

- Any 55-gallon or more drum.
- Any aboveground storage tank, inside or outside.

All facilities that have a registered aboveground tank need a SPCC plan.

For information and how it affects your facility, contact Mike Juranty at (603) 271-6058 or go to www.des.-nh.gov/ORCB/astprog.asp?theLink=intro.

Recently Adopted Rules

Water conservation rules (Env-Ws 390)

These rules apply to applicants for permits and applications for water withdrawal subject to the provisions of new source of groundwater for community water systems, and/or for bottled and bulk water operations. They also apply to water that exceeds 57,600 gallons over any 24-hour period and new surface water sources of water supply associated with projects that require a water quality certification. www.des.state.nh.us/Rulemaking/Adopted/Env-Ws_390.pdf

Standards for management of mercury containing amalgam (Env-Ws 905)

These rules apply to any dental practice where mercury-containing amalgam is applied, altered, maintained, or removed from within the mouth or where mercury containing amalgam waste is otherwise generated. www.des.state.nh.us/Rulemaking/Adopted/Env-Ws_905_06_01_05.pdf

Standards for the Pretreatment of Industrial Wastewaters (Env-Ws 904)

The purpose of these standards is to prevent the indirect discharge of pollutants to a publicly-owned treatment works. www.des.state.nh.us/Rulemaking/Adopted/Env-Ws_904.pdf

Portable Fuel Container Spillage Control (Env-A 4000)

This rule applies to any person who sells, supplies, offers for sale, or manufactures in New Hampshire any portable fuel container or spout, or both, for use in New Hampshire. www.des.state.nh.us/Rulemaking/Adopted/Env-A_4000.pdf

Goodbye MtBE. Hello Ethanol.

In May 2005, Governor John Lynch signed legislation prohibiting the use of MtBE in gasoline in New Hampshire after January 1, 2007. MtBE has been an additive of gasoline since the passage of the federal Clean Air Act Amendments of 1990, has since been found to pose serious risk to human health and a danger to our water supplies. To continue meeting the emission requirements of the federal Clean Air Act, New Hampshire will switch to ethanol, another gasoline additive, which has twice the oxygen content of MtBE, and can provide greater emissions reductions on a per gallon basis than MtBE.

Ethanol is produced from renewable, homegrown supplies of biological feedstock, such as corn and helps to reduce our dependence on fossil fuel imports. Though some worry that ethanol would be more expensive, companies such as Shell, Texaco and Mobil have already taken steps toward creating ethanol-blended gasoline, which has proven to be less expensive than MtBE-blended gasoline.

The most significant reason for the banning MtBE is water contamination. When MtBE leaks or spills, it is very difficult and expensive to clean up the contaminated water. It is soluble, travels at the same rate as groundwater, and disobeys all the familiar cleanup rules. Ethanol spills would not pose any water contamination dangers since it biodegrades within two to four hours.

Facts in this article were taken from the Illinois Corn Growers, www.ilcorn.org/Ethanol/Q__A_/a__a_.html

No Need to Idle!

Every day, millions of cars idle needlessly in lines, dropping off or picking up passengers, making deliveries, or waiting in drive-thru lanes. It's normal to idle when stopped for traffic signals, but if you voluntarily idle your car for longer periods, you are wasting money, causing air pollution, affecting climate change, and possibly damaging engine parts.

Many of us still operate our cars using habits and out-dated assumptions we've followed for years. But with the newer fuel-injected engines, many of these "rules" aren't true anymore. Let's set the record straight about idling.

- Today's fuel-injected engines don't need to be warmed up. Today's car only needs about 30 seconds of idling on a cold day before driving, and the engine actually warms up more quickly once the car is operating.
- Frequent restarting does *not* use more gas. Letting the vehicle idle for more than approximately 10 seconds uses more gas than shutting it off and restarting.
- Frequent restarting will not harm the vehicle.

With today's fuel prices, consider the fact that you're actually getting zero miles per gallon while the car is going nowhere. In addition, while the vehicle is idling, it is not operating at its peak temperature. This means incomplete combustion, so fuel residue condenses on engine parts like spark plugs and can contaminate engine oil. Also, idling allows water to condense in the exhaust system, which can cause rust and additional repair work.

Emissions from the tailpipes of idling vehicles create smog and ground level ozone that have a direct impact on our health.

Last, but not least, burning fossil fuels contributes to climate change by producing emissions of carbon dioxide, the principal greenhouse gas. You can eliminate unnecessary releases into the atmosphere by simply turning off the engine whenever possible!

So, there is no need to idle. Instead, use driving to warm up the engine; turn your car off when you think your wait will be more than 10 seconds; and as much as practical, go into an establishment rather than use the drive-thru. Ask your family and friends to avoid idling. Consider adopting a "no idling" ordinance in your town or city. These steps will help us all breathe more easily, save money, and clean up our air.

For more information on air quality and idling, contact Kathy Brockett, DES Air Resources Division, at (603) 271-6284, kbrockett@des.state.nh.us or visit www.des.nh.gov/ard_intro.htm.

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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Dates to Remember

October 27, 2005
13th Annual Pollution Prevention Conference
The New England Center
University of New Hampshire
Durham, NH
(603) 862-4234
www.learn.unh.edu/pollution

For upcoming pollution prevention events, please go to www.des.nh.gov/nhppp/nh02000.htm.

New P2 Publications

New fact sheets available for marina operators and boat owners:

- *Boat Washing and Engine Winterization for Boat Owners,* www.des.state.nh.us/factsheets/bb/bb-58.htm
- *Proper Boat Washing Procedures,* www.des.state.nh.us/factsheets/bb/bb-56.htm
- *Proper Engine Winterization Procedures,* www.des.state.nh.us/factsheets/bb/bb-57.htm

In the event of a spill or emergency involving hazardous materials:

- *Emergency Posting Template,* www.des.state.nh.us/nhppp/pdf/emergency_posting.pdf